IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: Group Art Unit:

Inventors: Bonaquist et al. Filed: Concurrently

Title: Biological Refrigeration System

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In accordance with 37 CFR 1.51, 1.56 and 1.97 to 1.99, the following is a relevance statement on each citation listed on attached form PTO-1449, and is made of record to assist the Patent & Trademark Office in its examination of this application:

U.S. 4,300,356 – Notaro et al. discloses a refrigeration storage assembly for the storage of biological materials wherein a higher temperature mechanical refrigeration source and a very low temperature cryogenic liquid refrigeration source coact to maintain an intermediate low storage temperature. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,076,372 – Acharya et al. discloses a method for generating refrigeration over a wide temperature range wherein a non-toxic, non-flammable and low or non-ozone-depleting mixture is formed from defined components and maintained in variable load form through compression, cooling, expansion and warming steps in a refrigeration cycle. There is no disclosure of a refrigeration

system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,128,914 – Tamaoki et al. discloses a refrigerating apparatus composed of an insulating frame with a composite structure of a vacuum insulating panel and a foam insulating material, and insulating door, and a twin refrigerating apparatus which cools goods stored in the insulating frame. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,205,794 – Brothers discloses a cryogenic storage device with an open top and a wall which defines an interior chamber adapted to receive biological specimens, having a fluid reservoir disposed around at least a portion of the wall on an outer surface of the wall for receiving a liquefied gaseous material such as liquid nitrogen. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,327,865 – Bonaquist et al. discloses a refrigeration system wherein refrigeration is generated at a relatively steady output by a refrigeration circuit and passed into a coupling fluid for transfer to a refrigeration load using a coupling fluid stabilizing circuit having a stabilizing reservoir. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,397,620 – Kelly et al. discloses an ultra-low temperature refrigeration system comprising a housing and a door which together define an interior storage compartment and which uses multiple layers of varying insulative materials to insulate the housing. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,426,019 – Acharya et al. discloses refrigerant mixtures useful for generating refrigeration over a wide temperature range which are non-toxic, non-flammable and low or non-ozone-depleting and which can be maintained in variable load form through compression, cooling, expansion and warming steps in a refrigeration cycle. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of

contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

U.S. 6,430,938 – Royal et al. discloses a cryogenic vessel system for containing cryogenic fluid wherein heat leak into the vessel interior is counteracted by refrigeration generated from energy provided by a pulse generator. There is no disclosure of a refrigeration system especially useful for refrigerating biological samples wherein a cryocooler, such as one employing a pressure wave from a pressure wave generator, is used to generate refrigeration for cooling liquid coolant or purging fluid, which is employed within hollow structures bordering an enclosed space of a storage unit or within the storage space of a storage unit and is subsequently cleaned of contaminants purged from the storage space, and thus this patent neither discloses nor suggests applicants' claimed invention.

A copy of each of the citations is enclosed herewith.

Respectfully submitted,

Stanley Ktorides

Stanley Ktorides
Attorney for Applicants
Reg. No. 29,399

Praxair, Inc.
39 Old Ridgebury Road
Danbury, CT 06810-5113
Phone: (203) 837-2178

Attorney Ref.: D-21372

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Information Disclosure Citation (Use several sheets if necessary)	Applicants Bonaquist et al.	
	Filing Date	Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
		4,300,356	11/1981	Notaro et al.	62	50	
		6,076,372	6/2000	Acharya et al.	62	606	
		6,128,940	10/2000	Tamaoki et al.	62	440	
		6,205,794	3/2001	Brothers	62	51.1	
		6,328,785	12/2001	Bonaquist et al.	62	79	
		6,397,629	6/2002	Kelly et al.	62	275	
		6,415,629	7/2002	Acharya et al.	252	67	
		6,427,468	8/2002	Royal et al.	62	6	

FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Subclass	Translation Yes	Translation No

Other Documents (including Author, Title, Date, Pertinent Pages, Etc.)

Examiner	Date Considered

* EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.